Extron® Electronics

INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

MKP 1000 and MKP 1200 Keypads

68-355-01 **Rev. E**
Printed in the USA
03 03

www.extron.com

Extron Electronics, USA
1230 South Lewis Street
Anaheim, CA 92805
USA
714.491.1500
Fax 714.491.1517

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands
+31.33.453.4040
Fax +31.33.453.4050

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Building
Singapore 368363
+65.6383.4400
Fax +65.6383.4664

Extron Electronics, Japan
Daisan DMJ Building 6F
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074 Japan
+81.3.3511.7655
Fax +81.3.3511.7656

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This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions• Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions• Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits-und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Avertissement

Alimentations• Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation• Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterias usadas siguiendo las instrucciones del fabricante.

FCC Class A Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his own expense.

Note: This unit was tested with shielded cables on the peripheral devices. Shielded cables must be used with the unit to ensure compliance.

Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:
Extron Electronics, Japan
Daisan DMJ Bldg. 6F,
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

Quick Start Guide — MKP 1000/1200

To install and set up the MKP 1000 and 1200, follow these steps:

Step 1

Turn all of the equipment off and disconnect it from the power source.

Step 2

Install the cables to and from the keypad in a wall, podium, or desk. See *Installing the Keypad* in chapter 2, *Installation and Connection*.

Step 3

Install the keypad in a wall, podium, or desk. See *Installing the Keypad* in chapter 2, *Installation and Connection*.

Step 4

Attach the input and output cables. See *Connecting the Keypad* in chapter 2, *Installation and Connection*.

Step 5

Attach power supply, (MKP 1200 only) See *Connecting a Local Power Supply* in chapter 2, *Installation and Connection*.

Step 6

Connect power cords and turn on the equipment in the following order: output devices (matrix switchers, projectors, monitors, etc.), and input devices (MCP 1000, DSS, cable boxes, etc.).

Step 7

Program the keypad. See Programming the MKP 1000, or Programming the MKP 1200 in chapter 3, *Operating the MKP Keypads*.

Step 8

Use the keypad to select inputs or presets. See Using the MKP 1000, or Using the MKP 1200 in chapter 3, *Operating the MKP Keypads*.

Quick Start Guide — MKP 1000/1200, cont'd

Table of Contents

Chapter 1 - Introduction

MKP 1000 Keypad as Part of a Matrix Switching System 1-2
- Rooming 1-3
- Presets – Room and Global 1-3
- Other Examples 1-3

Chapter 2 - Installation and Connection

Installing the Keypad 2-2
- Attaching the Electrical Box 2-2

Panel Mount 2-3

Connecting the Keypad 2-3
- Connecting to a Matrix 3200/6400/12800 2-4
- Connecting to a 3200/6400/12800 in a Daisy Chain 2-4
- Connecting to a 3200/6400/12800 in a Star Configuration 2-6
- Connecting Through an MCP 1000 Master 2-6
- Connecting a Local Power Supply (MKP 1200 only) 2-6

Making Cables 2-7

Chapter 3 - Operating the MKP Keypads

Programming the MKP 1000 3-2
- Checking the MKP 1000 Program 3-2
- Changing a Program in an MKP 1000 3-3

Using the MKP 1000 3-4
- View Option 3-4
- Select an Input or a Preset 3-5
- Error Display and Lockups 3-5

Programming the MKP 1200 3-6
- Checking the MKP 1200 Program 3-6
- Changing a Program in an MKP 1200 3-7
- Programming the MKP 1200 from the switcher 3-7

Using the MKP 1200 3-9
- Select an Input or a Preset 3-9
- Error Display and Lockups 3-10

MKP Keypad Status on the FPC 1000 3-10

Table of Contents, cont'd

Appendix A - Specifications and Part Numbers A-1
Specifications A-2
Engineering Drawing A-3
Dimensions A-4
Template for Electrical Box Cutout A-5
Template for Panel Mount Cutout A-6
Extron Comm-Link Cable A-7
Part Numbers A-8

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68-355-01 **Rev. E**
Printed in the USA
03 03

Chapter One

Introduction

MKP 1000 and 1200 Keypads as part of a Matrix Switching System

MKP 1000 and 1200 Keypads as part of a Matrix Switching System

The MKP 1000 and MKP 1200 are remote keypads that are installed in rooms where A/V presentations are made. Each keypad is programmed to control the switching of certain inputs from a large matrix switching system (3200/6400/12800, CrossPoint Plus, etc.) to outputs associated with that room.

The MKP keypads are mounted on two-gang wall plates installed in a wall, conference table, podium, etc. These keypads can be daisy chained to a master MCP 1000 remote control panel which is connected through an RS-232 link to a matrix switcher. The installation may include several conference and training rooms or audio/video control centers, etc. Input devices could include computers, satellite TV, A/V equipment, etc. and output devices could include monitors, projectors, tape recorders, etc.

Keypads may be located in various places throughout a business or educational complex. A keypad installed in a room with a display device, and/or an audio output device, is programmed to have access to certain inputs within a matrix switching system. Some input sources may be in the same room, while others may be located elsewhere.

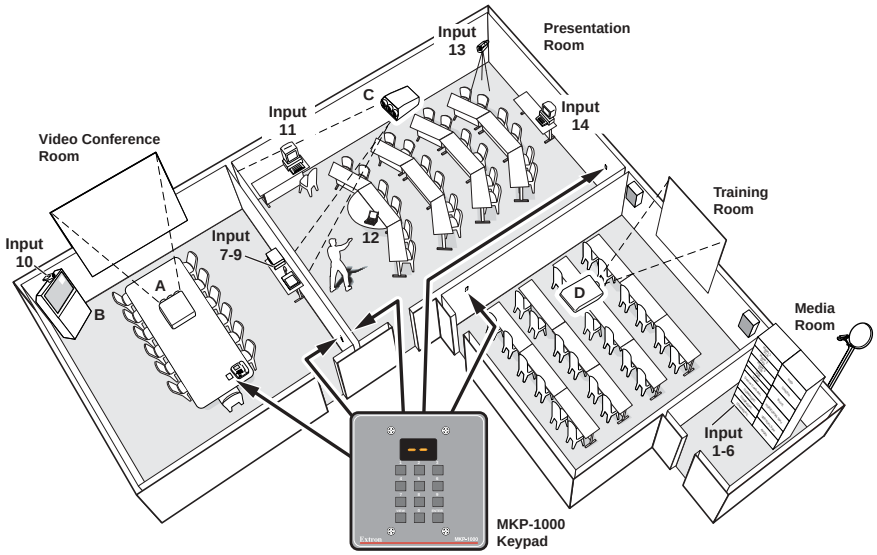


Figure 1-1 — Example of MKP 1000 Keypads installed in different rooms

Rooming

Rooming is made possible by user-defined virtual maps, which **must** be configured through Extron's virtualization control software. This is explained in user's manuals 68-355-03, 68-355-04, and 68-355-05. Each MKP keypad is programmed to operate in one of three modes:

- Room Preset mode – selects from possible room presets (Matrix 3200/6400/12800). (1-10 – MKP 1000 and 1-32 – MKP 1200)
- Output mode – ties one input to a dedicated output.
- Global Preset mode – selects from global presets.

Presets – Room and Global

A Matrix 3200/6400 master switcher can have up to 10 rooms defined and up to 10 "room presets" for each room, for a total of 100 possible room presets. A Matrix 12800 master switcher can have up to 32 rooms and up to 10 "room presets" for each room, for a total of 320 possible room presets. These presets are available only to the assigned room.

NOTE *Within the matrix system, inputs, outputs, rooms, presets, etc. can be named as to their location, function, etc. These names are not seen from the MKP keypad. The display shows selected input or preset numbers, as well as certain error and status codes.*

There can also be up to 32 "global" presets, which can affect the entire matrix switching system. Using the example in Figure 1-1, the "video conference room" has output devices: projector (A) and TV (B). Input devices include: a document camera, a VCR, a DVD player (7-9) and a video conferencing camera. Room presets allow these inputs to be displayed in this room. Other inputs could be from other places.

Other Examples

Although the matrix system may have up to 128 inputs and 128 outputs, a conference room may have three input devices and two output devices, a training room may have four input devices and one output device, etc. Typically, each output device will have an MKP keypad assigned to it. In the example in Figure 1-1, the "presentation room" (top center) has one output device, projector (C) and four input devices: a video camera (13), a laptop computer (12) and two PCs (11 & 14). The "Media Room" contains the matrix switcher, as well as other inputs (1-6) and possibility some control device(s).

At times there may be a need for people in the video conference room and/or those in the training room to see a lecture going on in the presentation room. For this, the video camera (input 13) must be available to those other rooms. A global preset selected from another

location (a keypad, a touch control screen, a PC or other RS-232 device) will tie the video camera to each of the large screen projectors in the other rooms and possibly to a VTR in the media room. The global preset overrides the local (room) selection. When finished, make a selection from the local keypad.

This manual covers four major steps for making an MKP keypad operational. These are explained in Chapters 2 and 3.

1. Installing the MKP keypad in a wall, podium, or desk.
2. Connecting the keypad to a matrix switcher.
3. Programming each keypad for its room number or its output device.
4. Operating the MKP keypad to select the input sources for that room, or that output device.

Chapter Two

Installation and Connection

Installing the Keypad

Panel Mount

Connecting the Keypad

Making Cables

Installing the Keypad

MKP keypads are designed to be used with standard, 2-gang electrical wall boxes (the MKP 1000 WT uses a wet location rated, 2-gang box), such as those used for light switches, etc. Figure 2-1 shows how the MKP keypad can be installed in a wall. This could also be in a desk, a podium, etc.

NOTE *When installing MKP 1000 WT keypads, you must install the keypad flush with the front of the electrical box and run a bead of silicone seal around the front edge of the box to provide optimum seal.*

The procedures provided here assume that the electrical wall boxes and the cable(s) have been installed for the system. Page 2-7 explains how to make cables.

NOTE *The electrical box must be deep enough to accommodate the electronics on the back of the MKP keypad. See the specifications on page 1-3 and drawings in Appendix A.*

When installing the keypad, the orientation of the unit will be as shown in Figure 2-1.

WARNING *Extron provides one electrical box with each MKP keypad (wet location rated box with MKP 1000 WT). However, the user may choose to use a different box. Because the tolerances on electrical boxes are very loose, it is recommended that you measure the actual box that you plan to use before making any precise cuts.*

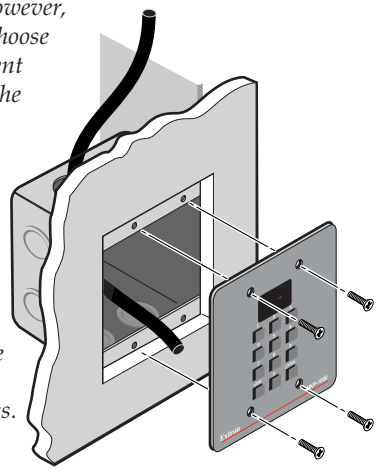


Figure 2-1 — The MKP keypad mounts in a standard electrical wall box

NOTE *When installing MKP keypads, you must conform to all country, state, and local electrical codes.*

Attaching the Electrical Box

When installing the electrical box use screws, bolts, or nails, depending upon the type and thickness of the material to which the box is being attached.

- For wood, use four #8 to #10 wood or sheet metal screws. A minimum of 1/2 inch (1.25 cm) of screw threads must penetrate the wood. If the wood is a 2x4, such as a wall stud, 10-penny or larger nails may be used.
- For attaching the electrical box to metal, use four #8 to #10 sheet metal screws (self-tapping) or #8 to #10 machine bolts with matching nuts.

Panel Mount

The MKP keypads can also be mounted flat on a desk or podium, or on a control panel or dash board, where the back is protected and does not require an electrical box. See Figure A-6 in Appendix A for a scaled cutout template.

Connecting the Keypad

The MKP keypads can be directly connected to the Matrix 3200/6400 switcher through the switcher's 5 mm MKP Comm connector pair (see Figure 2-3). The keypad may be connected to a Matrix 12800 or other switcher which doesn't have an MKP connector by interfacing the MCP 1000M (master) remote control panel between the matrix switcher and the keypad.

Connections on the MKP keypad include two, five-position, 3.5 mm, receptacles that accept captive screw connectors (also called "terminal blocks"). The two connectors are the same, with terminals for voltage, ground and communication with the master switcher (address 0). This allows for keypads to be connected in a daisy chain configuration, as shown in Figure 2-5.

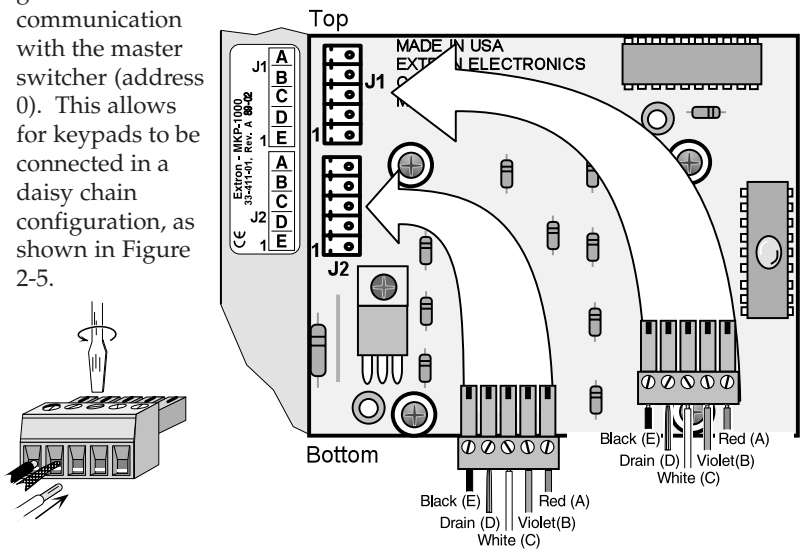


Figure 2-2 — Turn the wall plate around to view the 3.5 mm connectors

Next to the 3.5 mm connectors on the back of the MKP keypad there is a label marking pins A through E. When using the recommended cable, assign the colors according to figures 2-2 and 2-3. If you are making the cables, see page 2-6 for details.

Connecting to a Matrix 3200/6400/12800

The two 5 mm connectors on the rear panel of the 3200/6400/12800 master unit (address 0) are also labeled A through E. The cable connections must be made such that A on the MKP keypad goes to A on the 3200/6400/12800 connector, B to B, etc. See Figure 2-3.

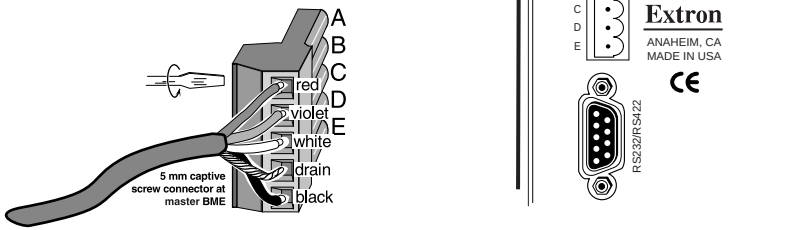


Figure 2-3 — The 5 mm connectors are on the rear of the 3200/6400/12800

NOTE *If the cables are **not** already made and installed, refer to "Making Cables" on page 2-7. If the cables are already made, connect them as shown in the diagrams that follow.*

Connecting to a 3200/6400/12800 in a Daisy Chain Configuration

The cables can be connected from one MKP keypad to another in a daisy-chain fashion. Therefore either cable may be plugged into either of the two 3.5 mm connectors on the MKP circuit board shown in figure 2-2.

NOTE *The orientation for the connectors is with the black wire to pin #1. See the detailed information on the next page.*

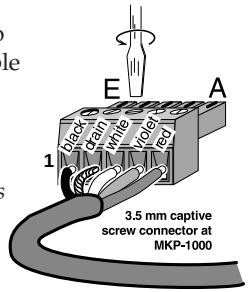


Figure 2-4 — Cable connections to the MKP Circuit Board

As many as 64 MKP keypads may be connected using this method. The total, maximum cable length is 1,000 feet – whether using daisy chain, star, or combination configuration.

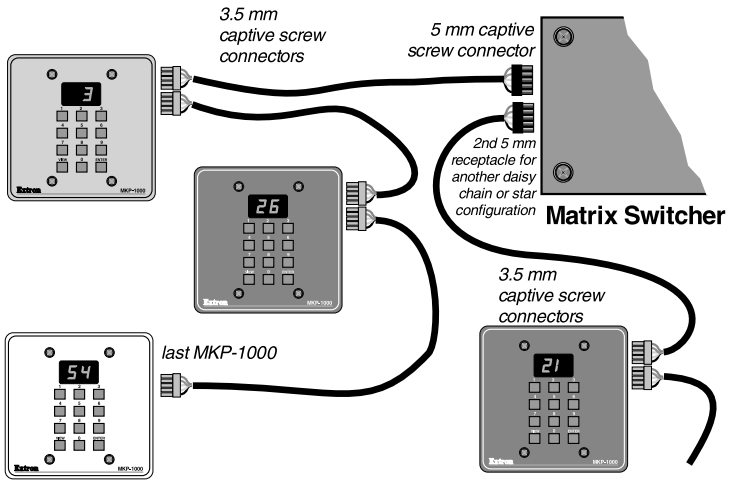

3.5 mm captive screw connectors
5 mm captive screw connector
2nd 5 mm receptacle for another daisy chain or star configuration
Matrix Switcher
3.5 mm captive screw connectors
last MKP-1000

Figure 2-5 — MKP keypads connected in a daisy chain configuration

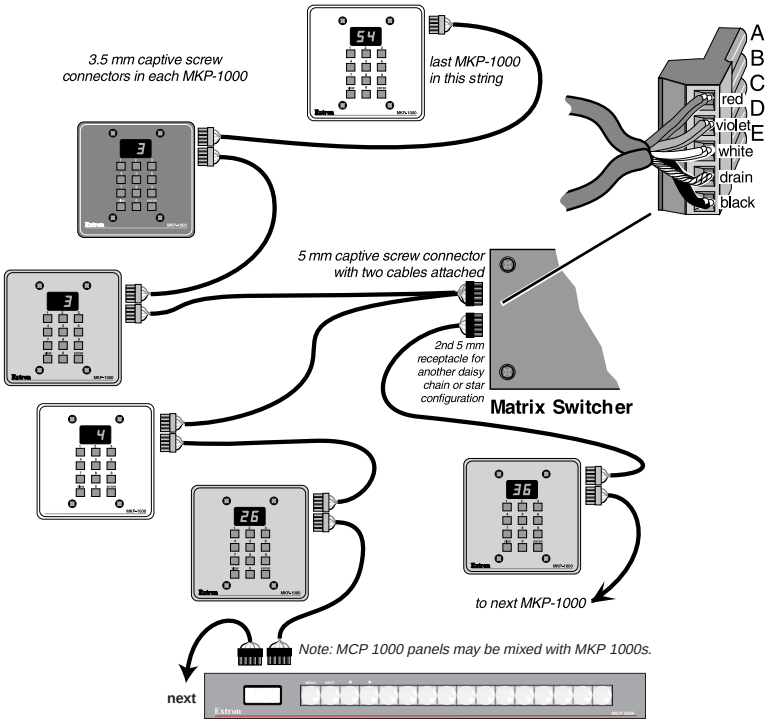


Figure 2-6 — MKP keypads connected in a star/daisy chain configuration

Connecting to a 3200/6400/12800 in a Star Configuration

The MCP 1000 switcher uses a 5 mm captive screw connector. The larger holes can accommodate more than one set of wires, allowing up to three cables to be inserted into each connector for making "star" connections (see figure 2-6).

NOTE *There is no termination required for the last MKP keypad.*

Connecting Through an MCP 1000 Master (including Matrix 12800)

Since the keypad can only be directly connected to matrix switchers which have the proper 5 mm connectors, the MCP 1000M (master) remote control panel may be used to indirectly connect the keypad to a switcher with an MKP Comm-Link port. The MCP 1000 master can be connected to a matrix switcher through the RS-232 ports. The keypad may then be connected to the MCP through the 5 mm Comm-Link port of the MCP 1000. See figure 2-7 and refer to the *MCP 1000 User's Manual* for further details.

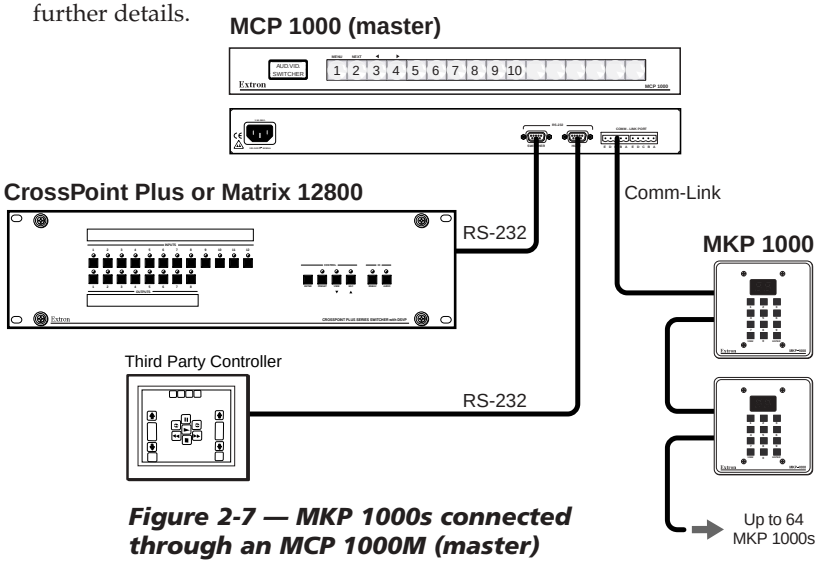


Figure 2-7 — MKP 1000s connected through an MCP 1000M (master)

Connecting a Local Power Supply (MKP 1200 only)

When more than 24 MKP 1200s are connected, or the control cable is 300' or more, local power may be required to support additional units. Error Code E99 displayed intermittantly on an MKP 1200 panel may also indicate the need for external power. The required power supplies are available from Extron (part #70-055-01) as needed. Refer to figure 2-8, and the following notes, for information on how to wire a power supply into the 5-pole, captive screw connectors used to link the units.

NOTE *When an external power supply is used, the A and B (+12V) connections must be removed at the Matrix 12800 to isolate the group of keypads using the external power, prior to connecting the power supply. If more than one external power supply is required (>24 keypads), each group of keypads using a power supply must be isolated from the others by removing the A and B (+12V) connections between the groups.*

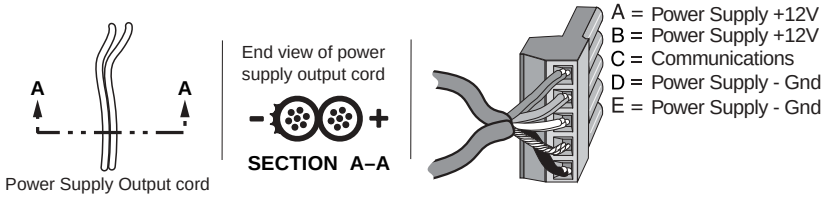

A
A
Power Supply Output cord
End view of power supply output cord
SECTION A–A
A = Power Supply +12V
B = Power Supply +12V
C = Communications
D = Power Supply - Gnd
E = Power Supply - Gnd

Figure 2-8 — Power connector wiring (MKP 1200 only)

CAUTION *When connecting the power supply, voltage polarity is extremely important. Applying power with incorrect voltage polarity could damage the power supply and the keypad. Identify the power cord negative lead by the ridges on the side of the cord.*

NOTE *Do not tin the stripped power supply leads before installing the captive screw connector. Tinned wires are not as secure in the captive screw connectors and could pull out.*

WARNING *The two power cord wires must be kept separate while the power supply is plugged in. Remove power before continuing.*

To verify the polarity before connection, plug in the power supply with no load and check the output with a voltmeter.

Making Cables

Choose a cable such as Extron's Comm-Link cable, AMX's Axlink, or Crestron's Crestnet. The wire specifications for Comm-Link cable are on page A-7. Colors may vary from this example.

Each MKP keypad ships with two 3.5 mm, 5-pole captive screw connectors. The Matrix 3200/6400/12800 switchers ship with two 5 mm, 5-pole connectors. Cables that go from one MKP keypad to another (daisy-chain) use the a 3.5 mm connector on each end.

NOTE *The total cable length for MKP keypads in a Matrix system (up to 64) should not exceed 1,000 feet (305 m).*

1. Trim approximately 1.5 inches of the cable jacket to expose the four insulated wires and a bare drain wire (silver-colored).
2. Cut off the foil shield and discard it.
3. Strip 1/4" of insulation from each of the four wires.
4. Twist the strands of the black wire, insert it into the opening that corresponds with pin #1 on the circuit board and tighten its captive screw.
5. Twist the strands of the drain wire, insert it into position #2 (D) and tighten its screw.

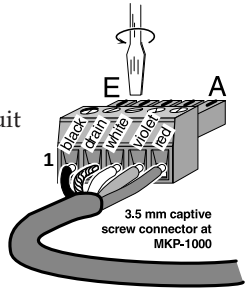


Figure 2-9 — Inserting wires into a 3.5 mm captive screw connector (#10-319-10)

6. Connect the remaining wires the same way (white, violet & red).

7a. If the cable is going to another MKP keypad, repeat steps 1-6 for the 3.5 mm connector on the other end.

7b. If the cable is going between an MKP keypad and the 3200/6400 master BME, use the same procedure with the 5 mm captive screw connector as shown in Figure 2-10.

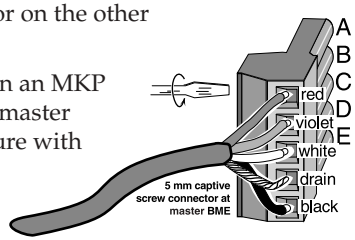


Figure 2-10 — Inserting wires into a 5 mm captive screw connector (#10-163-13)

NOTE *Cable wire assignments must be the same on both ends or damage may occur to circuits in the keypads.*

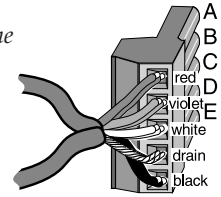


Figure 2-11 — Inserting two sets of wires into a 5 mm connector

Chapter Three

Operating the MKP Keypads

Programming the MKP 1000

Using the MKP 1000

Programming the MKP 1200

Using the MKP 1200

MKP Keypad Status on the FPC 1000

Programming the MKP 1000

These procedures must be done by a programmer or a technician and **not** by the user.

Checking the MKP 1000 Program

To check the current settings for a keypad, enter the program mode and note the displayed information as you press the Enter key to step through the sequence shown in Figure 3-1.

1. Press the 4-key combination and hold until the display shows *[P]*, and then a number. This number is the current address assigned to this keypad (1 - 64). This example shows *[26]*.
2. Press Enter to display the current Mode:
   GL = Global Mode
   OP = Output Mode
   Pr = Room Preset Mode

   For this example, the MKP 1000 is in Room Preset [Pr] Mode.
3. Press Enter to view the "room" number (for this example).

NOTE *Because this example is for Room Preset [Pr] mode, 6 is the room number. If the keypad were in Output [OP] Mode, the assigned output number would be now be displayed. In Global [GL] Mode, this step (#4) would be skipped. For other modes, see figure 3-2.*

4. Press Enter for View mode.
5. To turn the function On or Off, press the View button. If View is On during normal operation the selected input number can be displayed at the MKP 1000. See Page 3-4 for details.
6. Press Enter the last time to return to the default display.

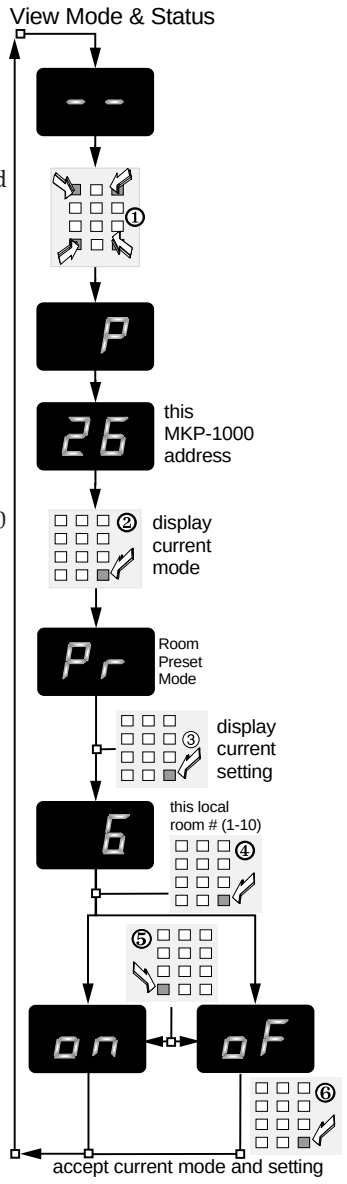


Figure 3-1 — Display the current mode and settings

Changing a Program in an MKP 1000

To change the current settings for a keypad, enter the program mode and press the Enter key to step through the sequence the same as on page 3-5, but this example shows how to change the MKP 1000 address, its mode and/or the output or room number. Follow the example shown in Figure 3-2.

1. Press the 4-key combination and hold it until the display shows *[P]*, and then a number. This number is the current address assigned to this keypad (1 - 64). This example shows *[26]*.

2. Press Enter to display the current Mode and press View to change the Mode.

3. Press Enter to accept the mode.

3a. If OP: display current Output number or enter a new number.

3b. If Pr: display Room number or enter new room number.

3c. If GL: no number will display; skip to 5.

4. Press Enter to display the state of the View function.

5. Press View to toggle the option On or Off.

NOTE *If most input selection is done through the master, the View option should be turned Off; if most input selection is done from the MKP 1000, the View option should be turned On.*

6. Press Enter to accept current settings and return to the default display.

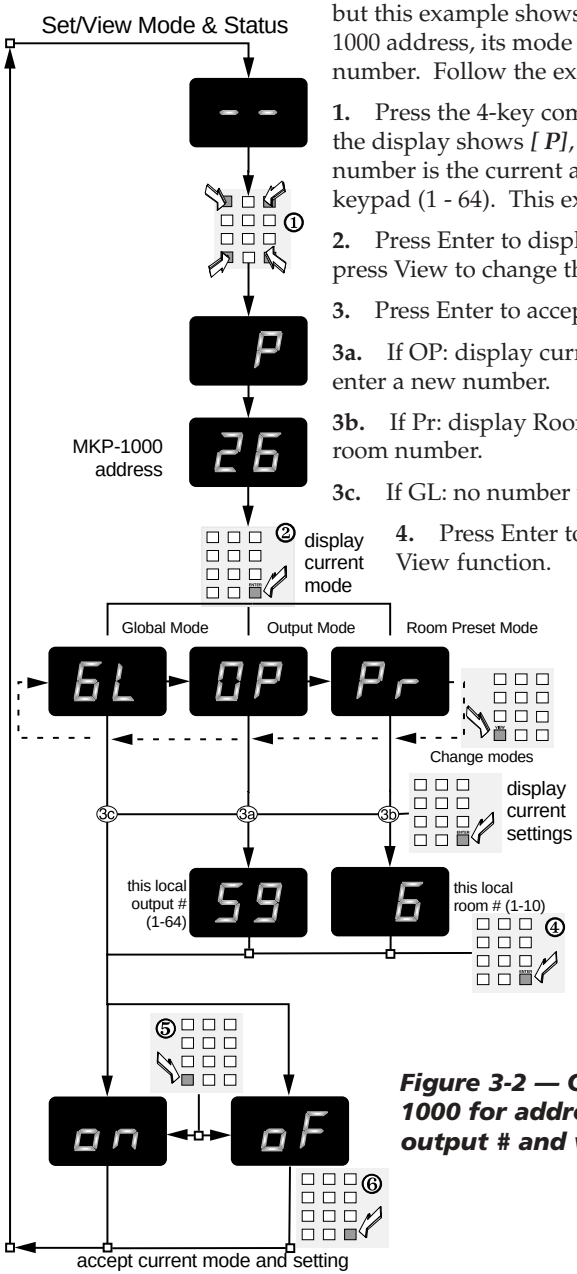


Figure 3-2 — Configure the MKP 1000 for address, mode, room/ output # and view option

Using the MKP 1000

In normal operation, the MKP 1000 is used to select an input source to be displayed or recorded on a local video output device. Before this can happen, at the time of installation, each MKP 1000 is programmed with a unique address and is set to one of three operating modes:

- Room Preset Mode (Pr) – The user may select one of 10 "room presets" programmed and made available to this room.
- Output Mode (OP) – Select one of 64 inputs to tie to this output.
- Global Preset Mode (GL) – Select one of 32 "global presets".

With the MKP 1000, the user selects an input or a preset from the choices above. There may be more than one keypad in a room. Although they may share the same room number, each has its own unique address (1-64), which is normally assigned to an output. Any changes to be made, other than selecting an input or a preset, are referred to as programming and are not done by the user. This is covered separately on pages 3-2 and 3-3.

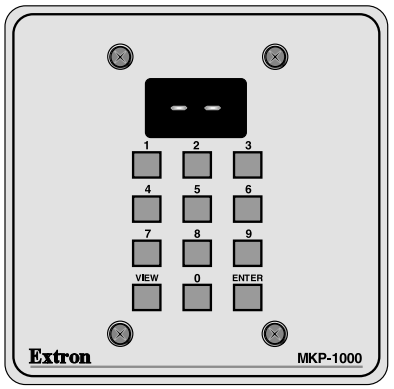


Figure 3-3 — The default display is two dashes

View Option

The MKP 1000 stores the last input number selected from its keypad. If the View option is **On**, the number can be displayed in the LEDs by pressing the View button. However, if the last input was selected from another location (the master or by RS-232 program for example), that input number is **not** stored in the MKP 1000 and pressing the View button will not show the correct input number.

NOTE *The View option is turned on or off by the programmer or technician and not by the user. When the View option is turned Off, pressing the button will give no response.*

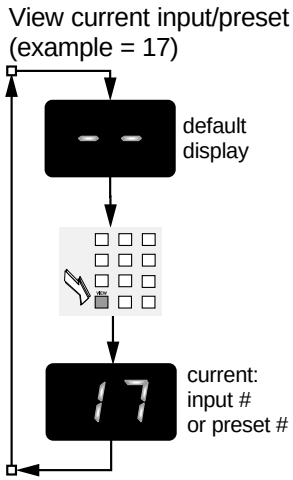
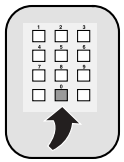


Figure 3-4 — Press View to display the current input selection (channel or preset number)

Select an Input or a Preset

To change the input selection, see Figure 3-5a. Press the desired number on the keypad, followed by the Enter key.

The first digit pressed (e.g., "1") will blink rapidly for 3 seconds. This is to allow additional keys to be pressed, if required. The subsequent keys must be pressed during that 3-second interval. If not, you must start again. (For this example, press 1, 7, Enter.) This sends a request to the master switcher to tie input #17 to the output device in your "room."



If you pressed the wrong button, or got an error, press the zero (0) key to clear the display and then start again.

NOTE If zero (0) is the first key pressed, followed by the Enter key, this requests a Mute condition. Later, to turn the mute condition off, select an input number and press Enter again.

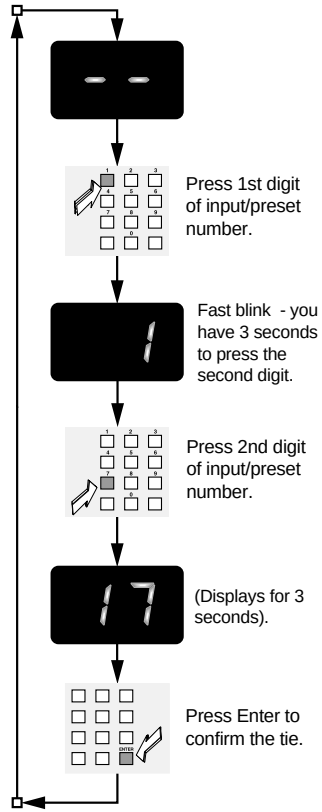
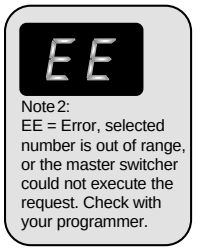

Request an input or preset:
OP = Select input (1-64)
GL = Global preset (1-32)
Pr = Room preset (1-32)
Note: The mode is selected when the keypad is programmed.
Press 1st digit of input/preset number.
Fast blink - you have 3 seconds to press the second digit.
Press 2nd digit of input/preset number.
(Displays for 3 seconds).
Press Enter to confirm the tie.

Figure 3-5a — Select an input from the MKP 1000

Error Display and Lockups


EE
Note 2:
EE = Error, selected number is out of range, or the master switcher could not execute the request. Check with your programmer.

If communication is not made with the master unit, trying to select an input will lock up the MKP 1000. This will happen if the keypad is not properly connected to the master.

If the number entered is out of range, an error code of *EE* will be displayed. For a 64x64 system, The maximum numbers are: Room preset = 10; Global preset = 32 and Input # = 64.

Figure 3-5b — Error code indicates "out of range"

NOTE *The procedures on the following pages must be done by a programmer or a technician and* ***not*** *by the user.*

Programming the MKP 1200

These procedures must be done by a programmer or a technician and **not** by the user.

Checking the MKP 1200 Program

To check the current settings for a keypad, enter the program mode and note the displayed information as you press the Enter key to step through the sequence shown in Figure 3-6. If an error occurs at any time during the configuration process, you must start at #1 again.

1. Press the 4-key combination and hold until the display shows *[Add]*, and then a number. This number is the current address assigned to this keypad (1-128).
2. Press Enter to display the current mode:
   Gpr = Global Preset mode
   out = Output to Input mode
   rPr = Room Preset mode

   For this example, the MKP 1200 is in Room Preset [rPr] mode.
3. Press Enter to view the current setting ("room" number for this example).

   NOTE *Because this example is for Room Preset [rPr] mode, 6 is the room number. If the keypad were in Output [out] mode, the assigned output number would be now be displayed. In Global [Gpr] mode, this step (#4) would be skipped.*
4. Press Enter the last time to return to the default display.

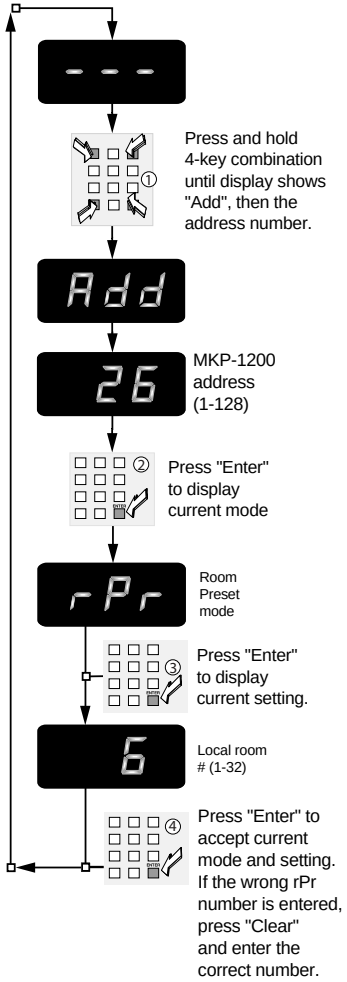
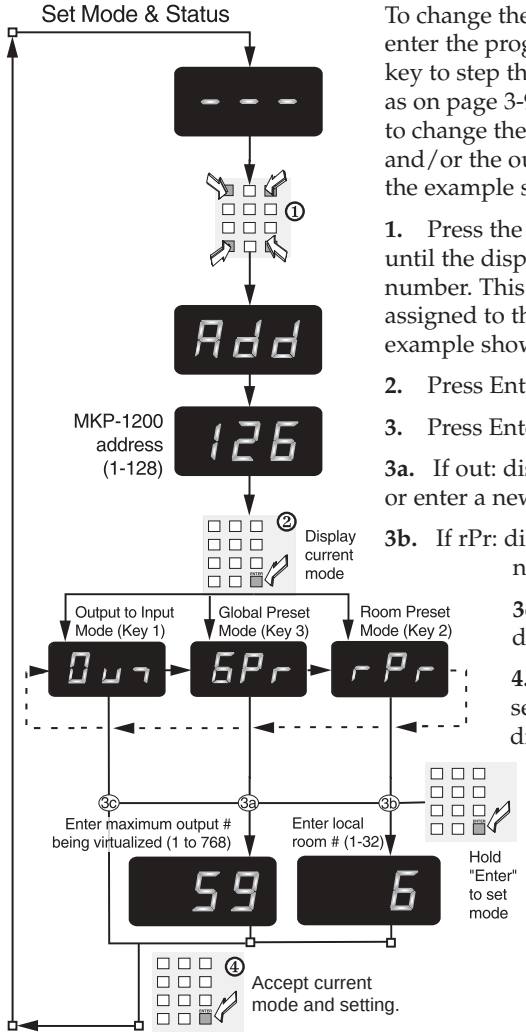

Press and hold 4-key combination until display shows "Add", then the address number.
MKP-1200 address (1-128)
Press "Enter" to display current mode
Room Preset mode
Press "Enter" to display current setting.
Local room # (1-32)
Press "Enter" to accept current mode and setting. If the wrong rPr number is entered, press "Clear" and enter the correct number.

Figure 3-6 — Display the current mode and settings

Changing a Program in an MKP 1200


Set Mode & Status
MKP-1200 address (1-128)
Display current mode
Output to Input Mode (Key 1)
Global Preset Mode (Key 3)
Room Preset Mode (Key 2)
Enter maximum output # being virtualized (1 to 768)
Enter local room # (1-32)
Hold "Enter" to set mode
Accept current mode and setting.

To change the current settings for a keypad, enter the program mode and press the Enter key to step through the sequence the same as on page 3-9, but this example shows how to change the MKP 1200 address, its mode and/or the output or room number. Follow the example shown in Figure 3-7.

1. Press the 4-key combination and hold it until the display shows *[Add]*, and then a number. This number is the current address assigned to this keypad (1-128). This example shows *[126]*.

2. Press Enter to display the current mode.

3. Press Enter to accept the mode.

3a. If out: display current Output number or enter a new number.

3b. If rPr: display Room number or enter new room number.

3c. If Gpr: no number will display; skip to 4.

4. Press Enter to accept current settings and return to the default display.

Figure 3-7 — Configure the MKP 1200 for address, mode, room, and output option

Programming the MKP 1200 from the switcher

MKP 1200 Remote Keypads can also be programmed from the Matrix 12800 using the Extron 12800/6400/3200 Virtualization/Control program via a network or RS-232 connection.

To program the keypad from the switcher:

1. Access the switcher using the Extron 12800/6400/3200 Virtualization/Control program.
2. Click on **Tools** at the top of the initial screen.

3. From the Tools drop down menu, click on **List Remote Keypads**. The Remote Keypad List (figure 3-8) is displayed.

   The Remote Keypad List shows the available keypads, the current mode and setting (parameter), the keypad model, and the firmware version installed.

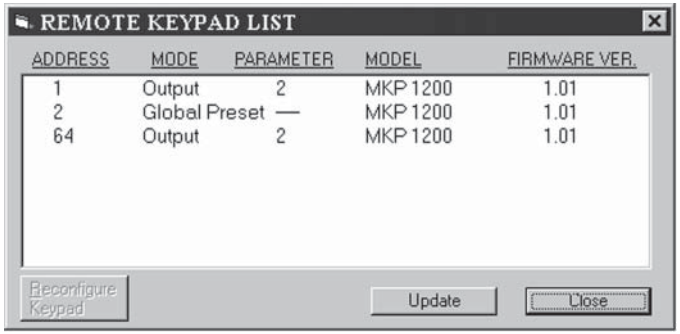

REMOTE KEYPAD LIST
ADDRESS MODE PARAMETER MODEL FIRMWARE VER.
1 Output 2 MKP 1200 1.01
2 Global Preset — MKP 1200 1.01
64 Output 2 MKP 1200 1.01
Reconfigure Keypad
Update
Close

Figure 3-8 — The Remote Keypad List

4. Highlight (click on) the keypad you wish to program (keypads can be identified by their address).
5. Click on **Reconfigure Keypad**, then click on the **Mode** drop down menu and select the keypad mode you wish to program; Output, Global Preset, or Room Preset (figure 3-9).

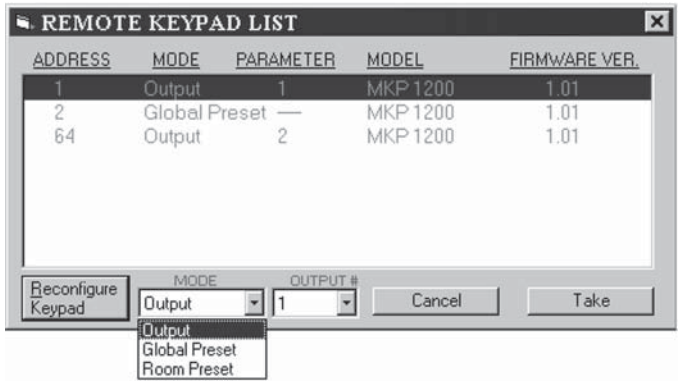


Figure 3-9 — Selecting the Mode to reconfigure

6. Click on the **Output#** drop down menu, then click on the new setting you wish to program into the keypad.
7. Click **Take** and watch the keypad list to verify that the new setting has been accepted.
8. Repeat for each keypad you wish to program.

Using the MKP 1200

In normal operation, the MKP 1200 is used to select an input source to be displayed or recorded on a local video output device. Before this can happen, at the time of installation, each MKP 1200 is programmed with a unique address and is set to one of three operating modes:

- Room Preset Mode (rPr) – The user may select one of 32 rooms with 10 "room presets" programmed and made available to this room.
- Output Mode (out) – Select one of the available inputs to tie to this output.
- Global Preset Mode (Gpr) – Select one of 64 "global presets".

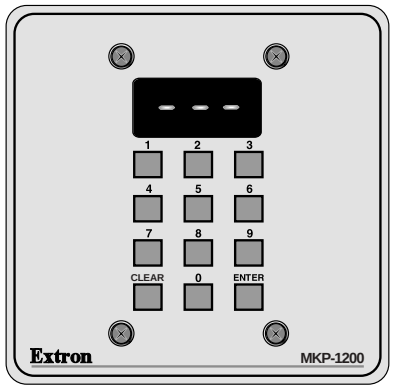


Figure 3-10 — The default display is three dashes

With the MKP 1200, the user selects an input or a preset from the choices above. There may be more than one keypad in a room. Although they may share the same room number, each has its own unique address (1-128), which is normally assigned to an output. Any changes to be made, other than selecting an input or a preset, are referred to as programming and are not done by the user. This is covered separately on pages 3-6 through 3-8.

Select an Input or a Preset

To change the input selection or request a preset, press the desired numbers on the keypad, followed by the Enter key (see figure 3-11a). If you make a mistake, you must start again. (For this example, press 1, 7, Enter.) This sends a request to the master switcher to tie input #17 to the output device in your "room."

NOTE To request the Mute condition, select zero (0), followed by the Enter key. To turn the mute condition off, select an input number and press Enter again.

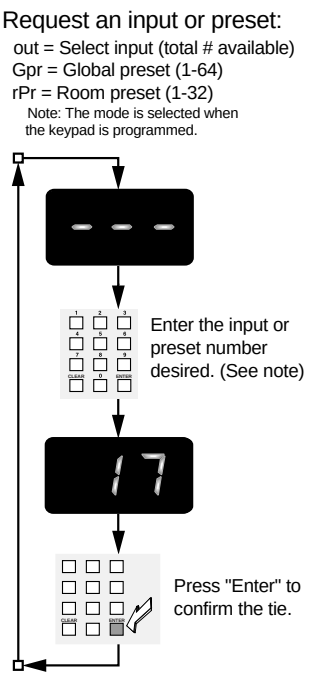

Request an input or preset:
out = Select input (total # available)
Gpr = Global preset (1-64)
rPr = Room preset (1-32)
Note: The mode is selected when the keypad is programmed.
Enter the input or preset number desired. (See note)
17
Press "Enter" to confirm the tie.

Figure 3-11a — Select an input from the MKP 1200

Error Display and Lockups

If communication is not made with the master unit, trying to select an input will lock up the MKP 1200. This will happen if the keypad is not properly connected to the master.

Except for two general errors (E98 and E99), the error code displayed depends upon the current keypad mode:

General Errors —
- (E98) Unknown configuration (could also mean 2 keypads with the same address)
- (E99) Communication error (between the keypad and the MTX 12800) - may indicate that an external power supply is required. (could also mean 2 keypads with the same address)

Global Preset mode —
- (E11) Entered preset number is out of range

Output mode —
- (E01) Entered input number is invalid
- (E12) Entered output number is out of range

Room Preset mode —
- (E11) Entered preset number is out of range
- (E21) Invalid room number

NOTE *If the switcher has been virtualized and the keypad has lost its assigned number, it will display E98 until the user sets it up again.*

NOTE *If the switcher has power but no communications, it will display Err until communication is established.*

Figure 3-11b — Error codes

MKP Keypad Status on the FPC 1000

If the 3200/6400/12800 system has an optional Front Panel Controller (see User's Manual 68-355-02 for FPC 1000 operation), keypad information can be viewed from the Status menu. This is view-only; MKP keypad status cannot be changed from the FPC 1000. To view this information do the following:

1. Press the Status button at the top of the FPC 1000. The System Status menu will display.
2. Press the MKP button at the bottom of the System Status menu.
3. A menu similar to the example in figure 3-12 will show all of the keypads found on the system. This menu displays the same information that can be displayed at each keypad, but it shows status for all of the keypads on one screen in a tabulated format:
   - Address: the assigned Keypad (MKP keypad) address
   - Mode: Output, Room Preset, or Global.
   - Config (configuration): for Output mode, this is the Output #; for Room Preset, this is the Room #.
   - Input number the keypad is currently selecting (selected by the user, as described on Pages 3-5 and 3-9).

NOTE *The Update button collects and displays current keypad status.*

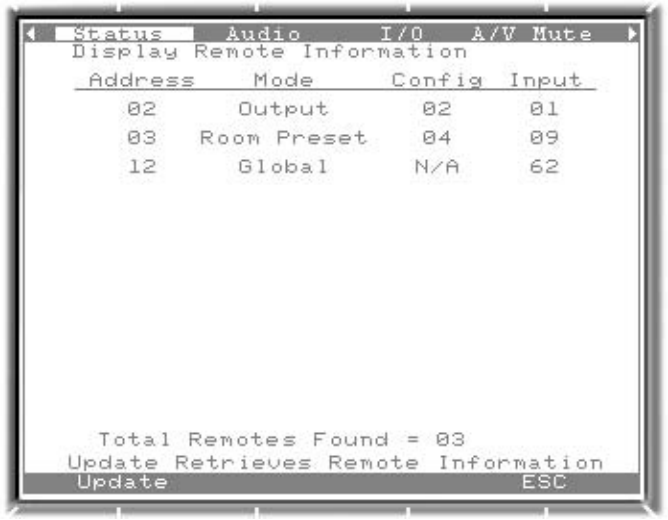


Figure 3-12 — The FPC 1000 Status MKP menu

4. Press ESC or any top menu button to close this menu.

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Appendix A

Specifications and Part Numbers

Specifications

Part Numbers

Specifications

NOTE *The MKP 1000 WT is electrically and functionally identical to the MKP 1000. The MKP 1000 WT includes a watertight, silicone seal designed to keep moisture out of the enclosure. A wet location rated, 2-gang electrical box is included with every MKP 1000 WT. The MKP 1200 specifications are different where noted.*

Control/remote — keypad

Extron remote key pad control .. (2) 3.5 mm 5-pole captive screw connectors

General

Power

- MKP 1000 and WT ..... Supplied by the matrix switcher or MCP 1000 Master
- MKP 1200 ..... Supplied by Matrix 12800 or 100VAC to 240VAC, 50/60 Hz, 12 watts, external, autoswitchable; to 12VDC, 1 A power supply (#70-055-01).

Temperature/humidity ..... Storage -40° to +158°F (-40° to +70°C) / 10% to 90%, non-condensing
Operating +32° to +122°F (0° to +50°C) / 10% to 90%, non-condensing

Rack mount ..... No, but furniture/wall mountable in a wall box

Enclosure type ..... Metal

Enclosure dimensions .....
- Plate ..... 4.5" H x 4.6" W x 0.1" D (2 gang) (11.4 cm H x 11.7 cm W x 0.3 cm D)
- Box ..... 4.1" H x 4.1" W x 2.4" D (2 gang) 10.4 cm H x 10.4 cm W x 6.1 cm D
- Boards ..... 2.9" H x 3.5" W x 1.0" D (7.4 cm H x 8.9 cm W x 2.5 cm D) Allow at least 1" (2.5 cm) D for connectors and cable. (Depth excludes connectors.)

Product weight

- MKP 1000 ..... 0.3 lbs (0.1 kg)
- MKP 1000WT ..... 0.4 lbs (0.2 kg)
- MKP 1200 ..... 0.4 lbs (0.2 kg)

Shipping weight

- MKP 1000 ..... 2 lbs (0.9 kg)
- MKP 1000WT ..... 3 lbs (1.4 kg)
- MKP 1200 ..... 2 lbs (0.9 kg)

Vibration ..... ISTA/NSTA 1A in carton (International Safe Transit Association)
Listings ..... UL, CUL
Compliances ..... CE, FCC Class A
MTBF ..... 30,000 hours
Warranty ..... 3 years parts and labor

NOTE *Specifications are subject to change without notice.*

Engineering Drawing

Figure A-3 is an engineering drawing showing the mechanics of the MKP wall plate. Use these dimensions if you are making custom wall plates.

NOTE *The drawing is not to scale.*

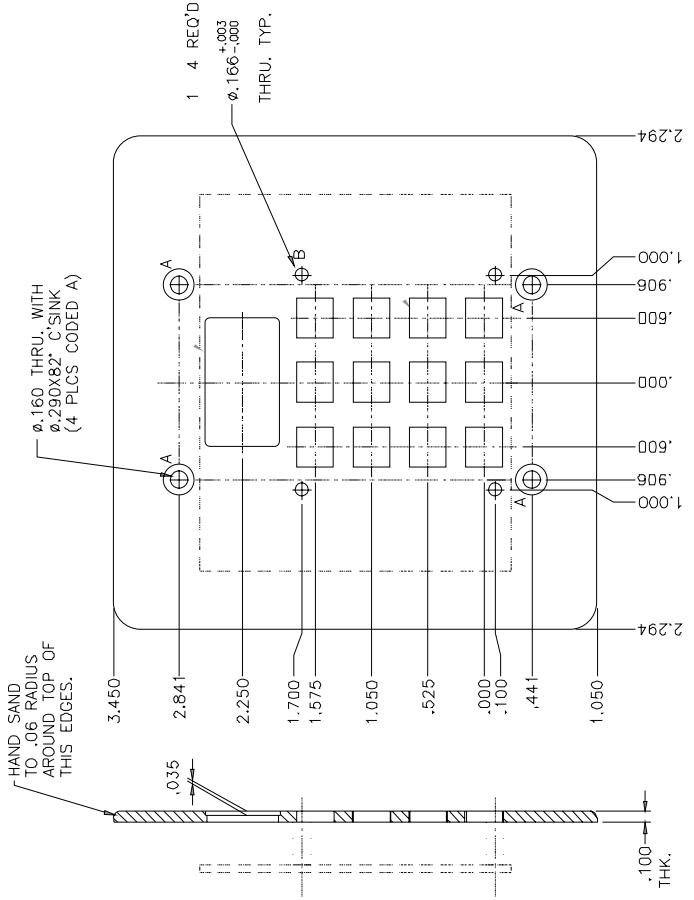

Figure A-3 — Engineering drawing for MKP Wall Plate (not to scale)

Dimensions

It is not necessary to use the electrical box described here. Any standard box (wet location rated box for the MKP 1000 WT) that meets the local electrical codes may be used.

NOTE *Because tolerances on standard electrical box dimensions are very loose, be sure to measure the actual box that you plan to use before making precise cuts.*

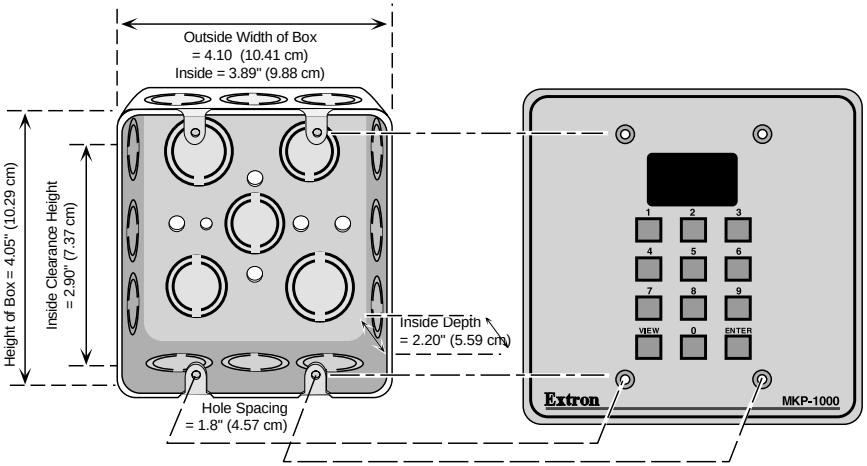

Figure A-1 — Dimensions of wall plate and 2-gang electrical wall box

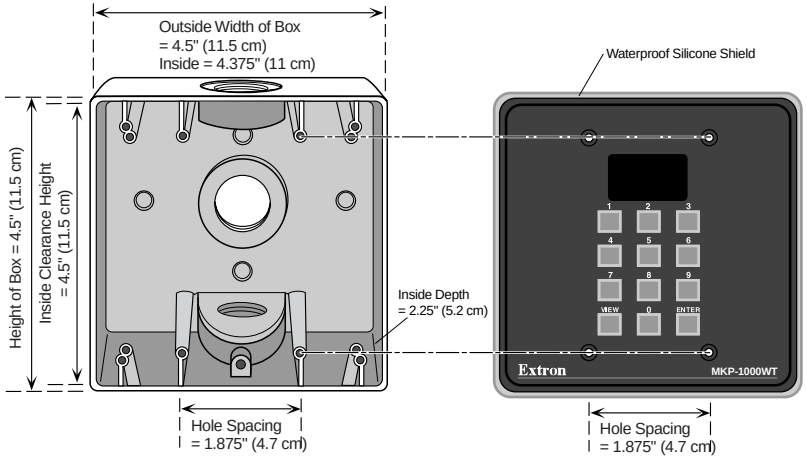

Figure A-2 — Dimensions of wall plate and wet location rated, 2-gang electrical box

Template for Electrical Box Cutout

Figure A-2 is a drawing that shows the dimensions for cutting a hole to accommodate a standard, 2-gang electrical box for the MKP keypads.

NOTE *Drawn to scale; may be used as a template.*

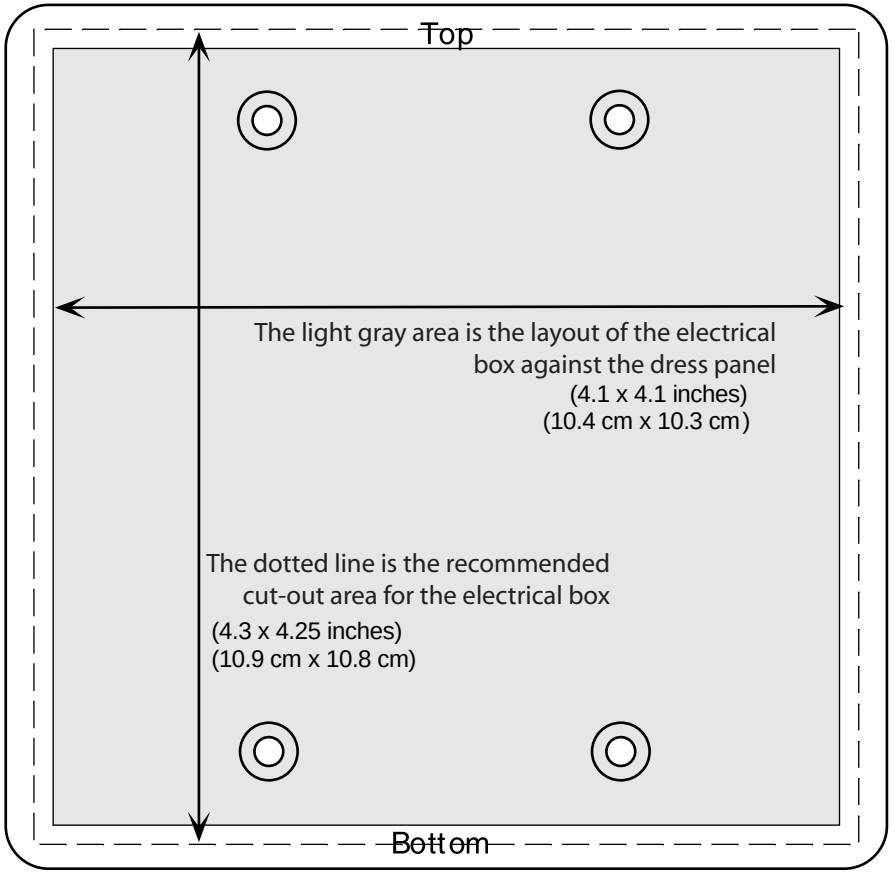
Top
The light gray area is the layout of the electrical box against the dress panel
(4.1 x 4.1 inches)
(10.4 cm x 10.3 cm)
The dotted line is the recommended cut-out area for the electrical box
(4.3 x 4.25 inches)
(10.9 cm x 10.8 cm)
Bottom

Figure A-4 — Template for electrical box cutout (drawn to scale)

NOTE *Because the tolerances on electrical boxes are loose, it is recommended that measure the actual box that you plan to use before making the cutout.*

Template for Panel Mount Cutout

Figure A-5 is a drawing that shows the dimensions for cutting a hole to accommodate the keypad circuit board for mounting the keypad on a flat surface. This type of installation can include a desk or podium, or a control panel or dash board, where the back is protected and does not require an electrical box.

NOTE *Drawn to scale; may be used as a template.*

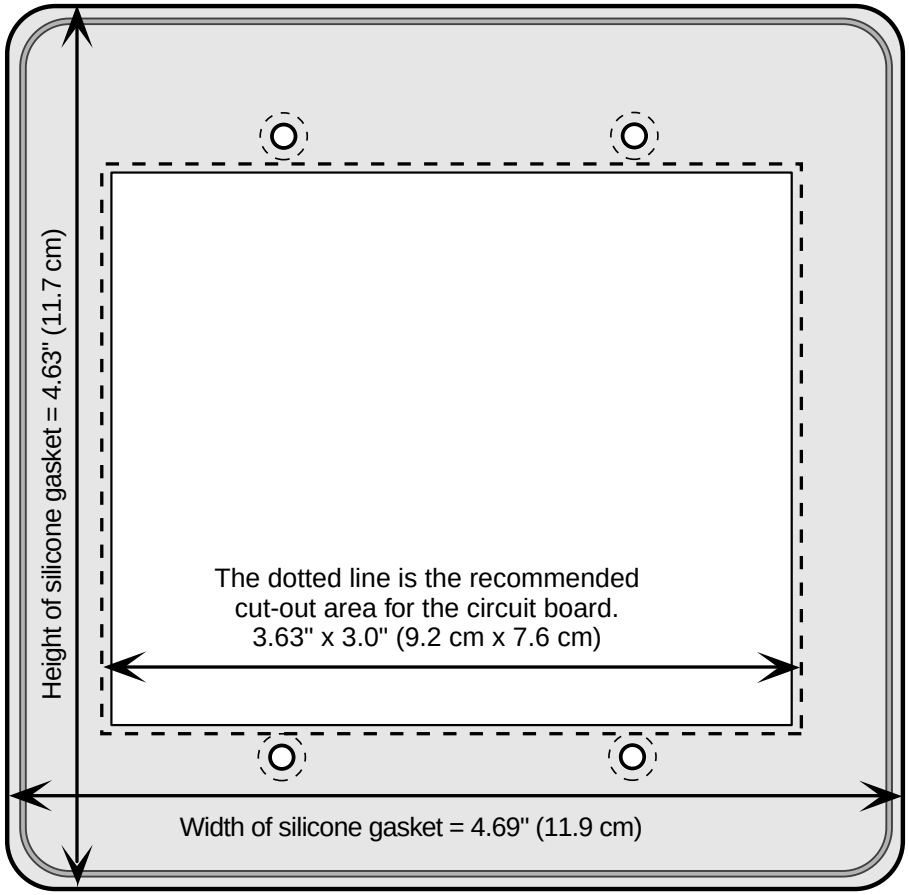
Height of silicone gasket = 4.63" (11.7 cm)
The dotted line is the recommended
cut-out area for the circuit board.
3.63" x 3.0" (9.2 cm x 7.6 cm)
Width of silicone gasket = 4.69" (11.9 cm)

Figure A-5 — Template for panel mount cutout (drawn to scale)

Extron Comm-Link cable

Wire specifications are as follows:

A (red) = 18 AWG

B (violet or blue) = 22 AWG (grouped and shielded)
C (white) = 22 AWG
D (Drain) = 24 AWG

E (black) = 18 AWG

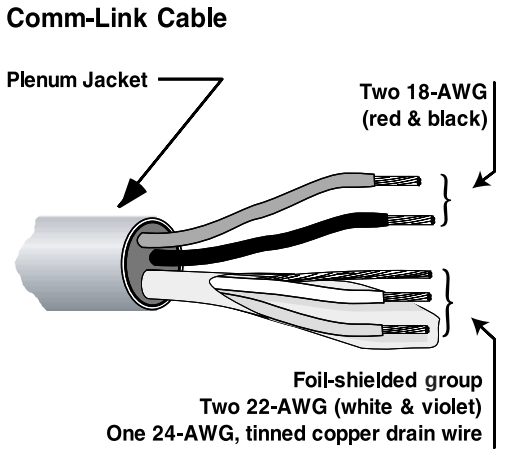

Figure A-6 — Extron's Comm-Link cable was designed for use with MKP keypads

Part Numbers

Included Parts

These items are included in each order for an MKP keypad:

Included parts	Replacement part number
12VDC, 1A external power supply	70-055-01
MKP 1000/1200 User's Manual	
MKP 1000 Keypads:	
Gray	60-239-01
Black	60-239-02
White	60-239-03
MKP 1000 WT Keypads:	
Gray	60-239-51
Black	60-239-52
White	60-239-53
MKP 1200 Keypads:	
Gray	60-528-01
Black	60-528-02
White	60-528-03
MCP 1000 Remote Control Panel	60-298-01

Cables

Cables		Part number
Comm-Link Cable:	**Cut lengths:**	
	50 feet	26-461-01
	100 feet	26-461-02
	200 feet	26-461-03
	400 feet	26-461-04
	Bulk spools:	
	500 feet	22-119-02
	1,000 feet	22-119-03